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(54) VASCULAR LESION DIAGNOSTIC SYSTEM AND DIAGNOSTIC PROGRAM MEMORY STORAGE MEDIUM

(57) Abstract:

PROBLEM TO BE SOLVED: To precisely mensurate the physical characteristic of a blood vessel wall by analyzing the inner and outer surfaces of the blood vessel wall by a large amplitude displacement motion analyzing means under a limiting condition of making the sum of displacements in one beat of large amplitude displacement motion zero.

SOLUTION: An ultrasonic probe 4 is driven by an ultrasonic pulse of ΔT period to emit an ultrasonic beam into the body through a body surface 2. The ultrasonic beam is reflected by a blood vessel 3, and transmitted to an ultrasonic mensuration part 5 through the ultrasonic probe 4. Amplification, orthogonal wave detection and A/D conversion are performed there to form a detection waveform showing a tomographic data, which is then inputted to a data analyzing processing part 10. A large amplitude displacement motion analyzing means 11 analyzes the amplitude and phase of a wave detection signal $V_m(t)$ under the limitation of making the accumulation of displacements within one beat zero to determine the large amplitude displace-

ment motion loci of the inner and outer surfaces of the blood vessel wall accompanied by the heart pulsation. According to this, stable images can be provided to perform a precise measurement.

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